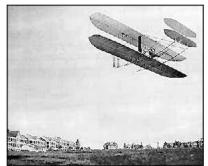


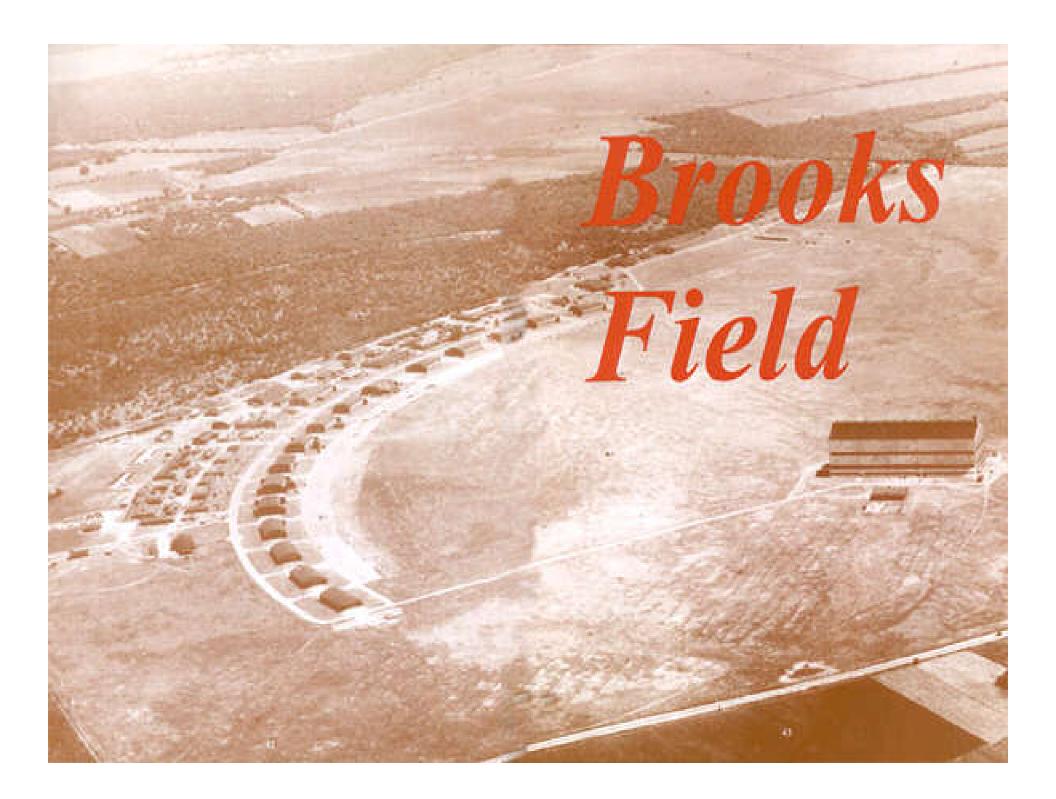


- First fatal aviation mishap: 17 Sept 1908
 at Fort Meyer, VA. Wright Model A Aircraft
 piloted by Orville Wright (injured). Passenger
 Thomas Selfridge was killed.
- WWI High aviation mishap rate
- Original aviator selection criteria
 - Not fit for cavalry/infantry duty
- Army Air Medical Service 1917
 - First Aeromedical Standards
 - Aimed to reduce mishaps
 - Flight Surgeon Born
 - Develop & Apply Standards





Airco De Havilland DH.4 Light Bomber and Air Mail Plane



Prior to participating in World War I, Sidney Johnson Brooks became the first flying cadet to lose life during training in San Antonio, Texas. Before volunteering for the Army, Brooks was a part time reporter for the San Antonio Light Newspaper. After his completion of officer training school, Brooks entered the Army Signal Corps Air Service and began his flight training at Kelly Field, San Antonio, Texas.

On November 13, 1917, Brooks embarked on his first solo flight. Upon approaching to land at Kelly Field, Brooks lost consciousness and plummeted to his death according to some observers. Reports later revealed that Brooks might of suffered from severe secondary effects from an influenza vaccination that he received that morning.



- 1918 Hazelhurst Field -USAFSAM instituted by Dr Theodore Lyster as the Medical Research Laboratory of the Air Service, U.S. Army Signal Corps
- Louis H. Bauer
 - First civil aviation medicine regulations for U.S. civil airmen on December 31, 1926 (Air Commerce Act)
 - Developed plans covering periodic exams, waivers, and implemented through designated Aviation Medical Examiners
 - Text book <u>Aviation Medicine</u> first published 1926
- Aero Medical Association founded by Bauer in 1929
 - Aero Medical Association now ASMA
 - Journal of Aviation Medicine now Journal
 of Aviation Space, and Environmental Medicine



- 1919-1938 Era of Active Research in Aerospace Medicine
 - Oxygen supply, pressure suits, pressurized cabins
 - Harry G Armstrong -Aero Medical Research Laboratory at Wright Field: high altitude hypoxia, aeroembolism, medical effects of acceleration, Armstrong's Line (63,000 ft)

WWII

- Further Advances in hypoxia research and AE
- Pressure breathing diluter demand oxygen equipment for high altitude environment
- B-29 Superfortress –Pressurized
- Experimental Anti-G Devices and Suits
- Lt William Schick, first Flight Surgeon KIA, December 7, 1941 at Pearl Harbor, mbr of 38th Division Reconnaissance Squadron

- 1945 Aero Medical Association attempted to organize Aviation Medicine practice into specialty
 - Aviation medicine mindset "normal response to abnormal environment"
- 1946 Early plans for USAFSAM "Center of Aviation Excellence"
- 1949 AFMS begins
- 1949 American Board of Preventive Medicine and Public Health
- 1953 ABPM initiated certification in Aviation Medicine
- 1955 First Aviation Medicine board examination
- 1959 -- USAFSAM at Brooks AFB

- 1971 C-9 enters service
- 1980s DoD and Medicare healthcare costs soaring
- 1988 CHAMPUS Reform Initiative begins
- 1990 1991 -- Persian Gulf War
- 1992 RVU introduced by Health Care Financing Admin
- 1993 TRICARE begins/CHAMPUS ends







- 2001 NDAA authorizes TRICARE to supplement Medicare
- 2002 4F merger →4N/E
- 2003 C-9 is retired; "aircraft of opportunity" concept
- 2008 –USAFSAM move to WPAFB begins…
- 2009 Remotely piloted aircraft "pilots"
- 2011 PAs enter Flight Medicine, MSME......





Overview

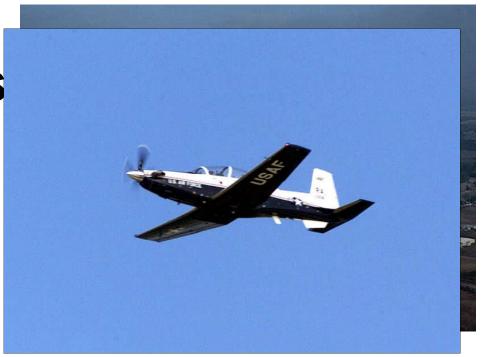
- Types of Flying Class and Special Operational Duty exams
- Air Force Instructions
- Duration of Validity
- Terminology: Medically acceptable, disqualifying, waiver
- Certifying / Waiver Authority
- Medical Flight Screening

Flying and Special Operational Duty Examinations

- Flying Class (FC)
 - I, IA, II (IIA, IIB, IIC), III, IIU
- Ground based controllers
 - ATC, AWACS, TACP, ALO, RPA sensor operators
- Space and missile operations (SMOD)
- Parachute duty
- CCT, PJ (STO, CRO)
- Physiology training personnel (e.g., hyperbaric chamber personnel)

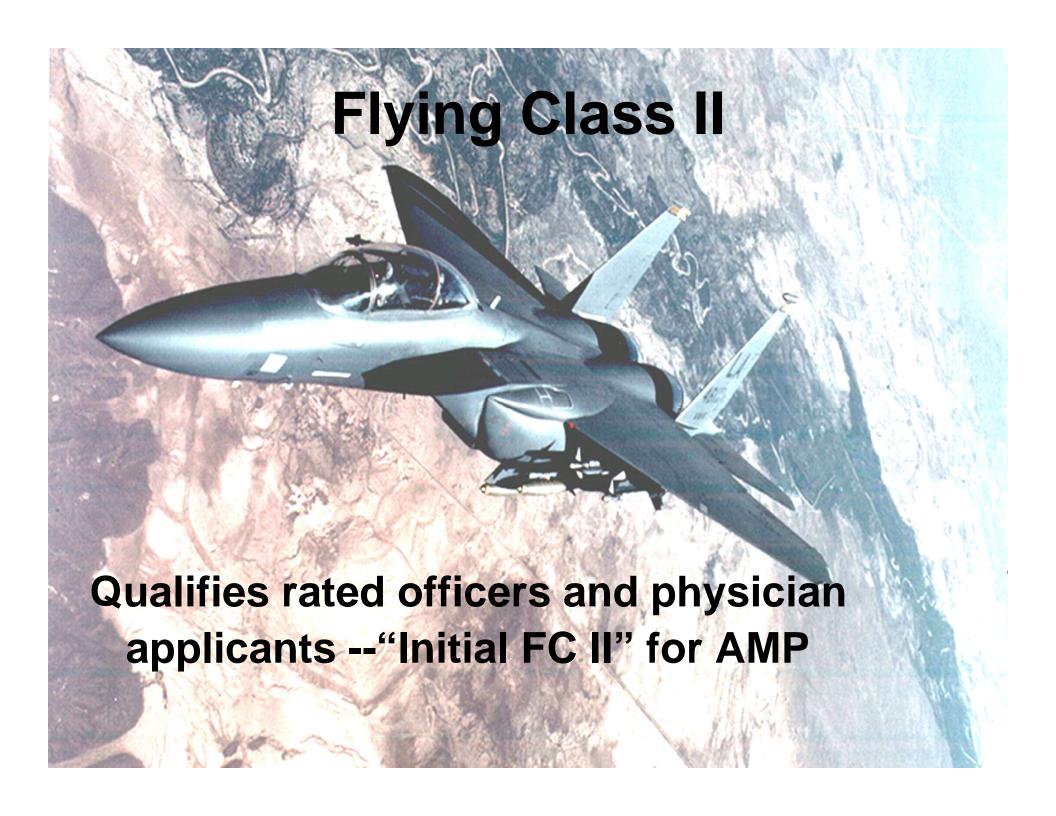
Types of Exams

- Flying Class I
 qualifies for selection
 into Medical Flight
 Screening and
 commencement of
 undergraduate pilot
 training (UPT).
- Flying Class IA
 qualifies for selection
 and commencement of
 undergraduate navigator
 training (UNT)





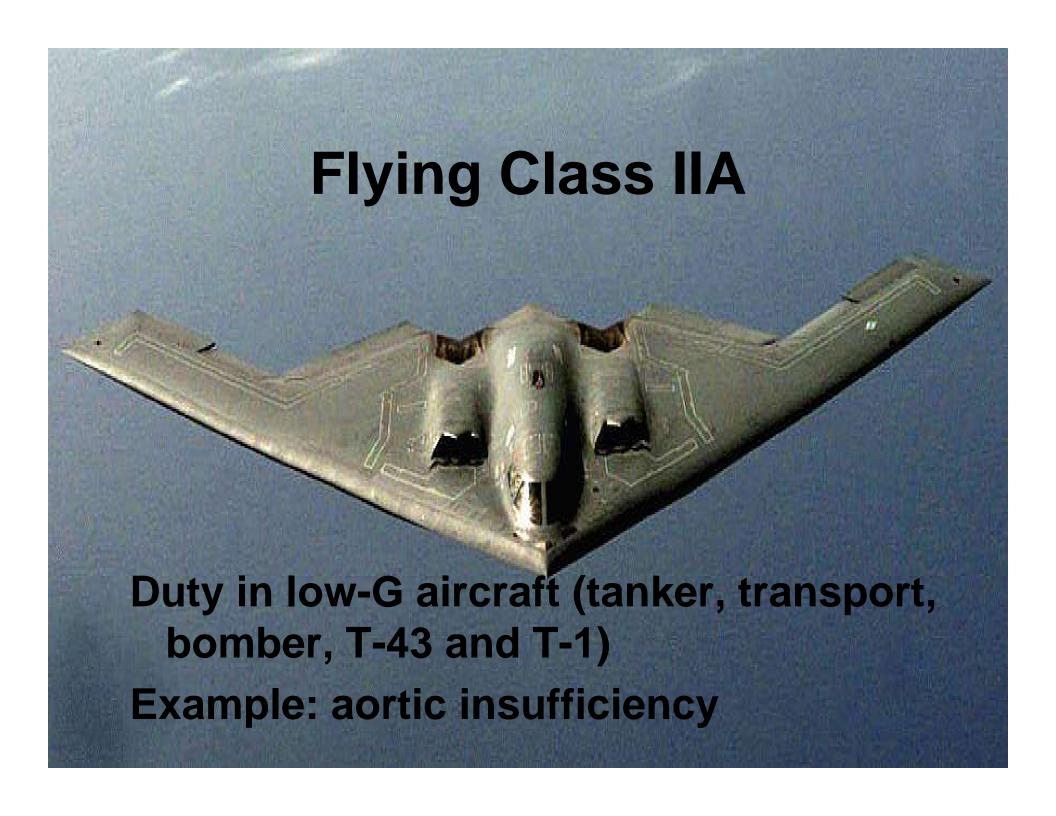


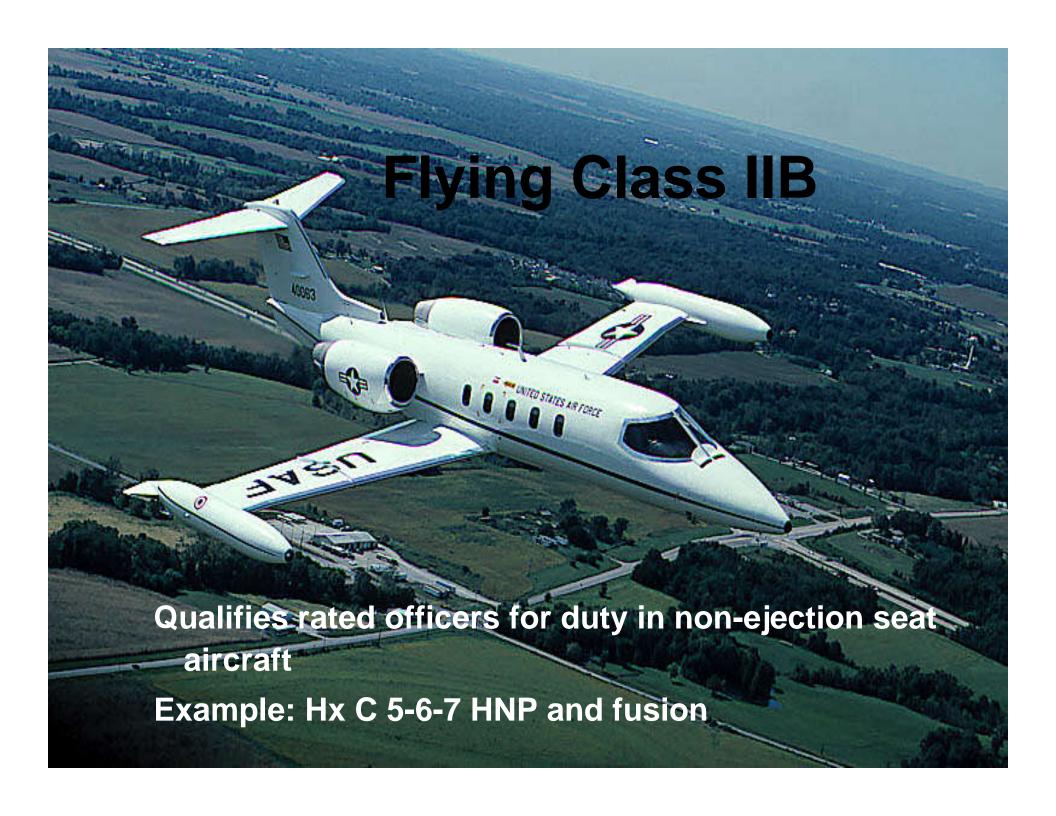


Categorical Flying Class II



Most have Flying Class II: no restrictions







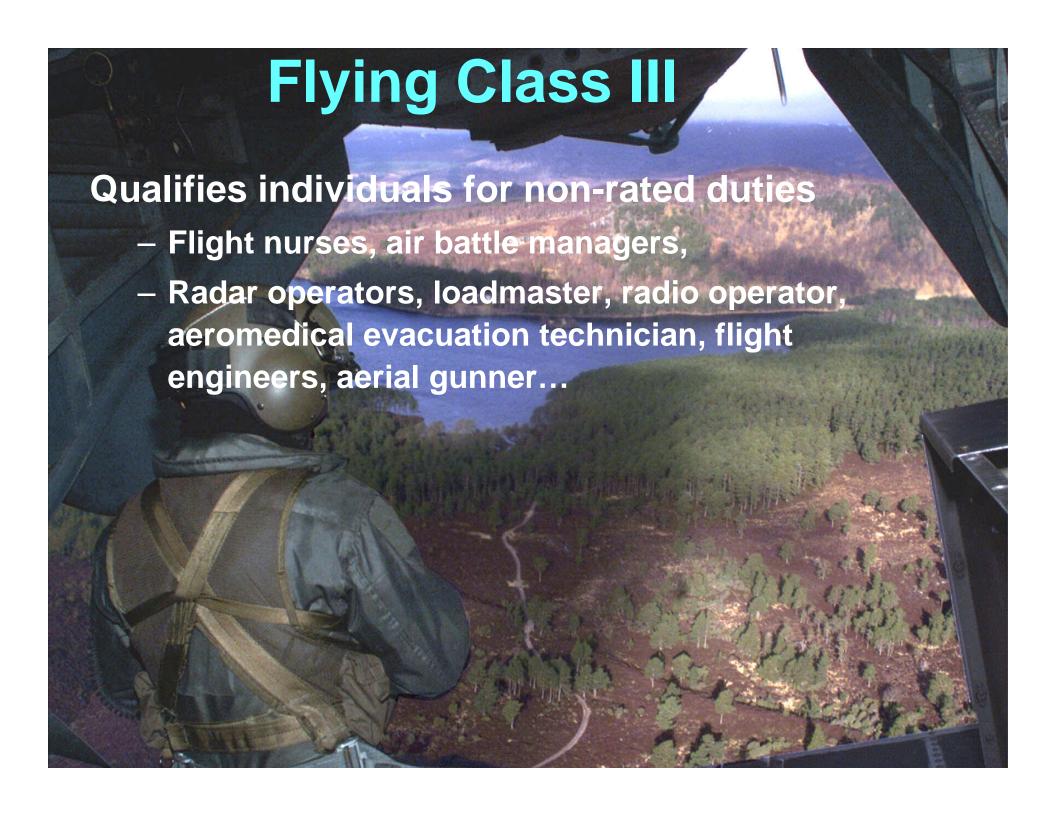


Example: Color vision deficiency

FC IIU

Rated officers for remotely piloted vehicle pilot duties ONLY (usually prior pilots who become DQ for manned aviation)





Flying Class	Qualifies
1	for selection into MFS, and once MFS is passed, commencement of undergraduate pilot training (UPT)
IA	for selection and commencement of UNT.
II	rated officers (pilots, navigators/electronic warfare officers and flight surgeon/flight surgeon applicants, RPA),
IIA	rated officers for duty in low-G aircraft (e.g. tanker, transport, bomber, T-43, T-1).
IIB	rated officers for duty in non-ejection seat aircraft.
IIC	rated officers for aviation duty as specified in the remarks section of AF Form 1042, SF 88/DD Form 2808, AIMWTS
III	individuals for non-rated duties in ASC 9D, 9E, 9W and other relevant ASCs (and USAFA cadets)
IIU	Categorical for RPA pilot duties only – generally for rated aviators who can no longer qualify for FCII

Other Special Flying Classes

- Missile launch crew
- Parachute duty
- Space operations
- Air traffic controllers
- Ground based air traffic controllers
- Physiology Training personnel (hyperbaric chamber personnel)

Type of Exam	Section, pages
Flying Classes (FC I, IA, II, III)	6G 6.44.130. 73-109
FC IIU	6H 6.45.121. 109-119
GBC	6I 6.46.119. 119-124
SMOD	6J 6.47.110. 124-129
Miscellaneous (parachute, CCT, PJ, MDD, Physio, SERE, NVD, incentive/orientation, USAFA fly, intl, small UAS/RPA	6K 6.48.111. 129-140

AFI is 192 pages, pp73-140 is aviation Standards Ch 5 (retention) and Ch 13 (deployment)

What are the Rules?

Is military aviation the same as civilian flying?

Why do we have aviation standards?

Why do we have flight surgeons?

In most military services aircrew have the most restrictive medical requirements

- 1. Member must first pass general military service entrance standards
- 2. Member must then maintain medical standards to stay in the military. If not, he/she must pass a Medical Evaluation Board to remain in the military
- 3. After items 1 and 2, member must then pass aviation standards

Members who do not meet the standards are disqualified (DQ) from military service

- 1. General military service entrance standards
- 2. Continued military duty medical standards
- 3. Aviation military standards

US Air Force Instruction 48-123

- WHAT: Establishes procedures, requirements, recording, and medical standards for medical examinations given by the US Air Force.
- HOW/WHY: References the authority for retiring, discharging, or retaining members who, because of physical disability, are unfit to perform their duties.
- WHO: Instruction applies to all applicants/trained flyers for military service, scholarship programs, US Air Force Reserves (USAFR) and Air National Guard (ANG).



Military regulations are based on job requirements

- Induction Standards (Entry into Military)
 - AFI 48-123 DoDI
- Continued Military Duty (WWQ: World wide qualification)
 - AFI 48-123 Chapter 5
- Flying standards
 - AFI 48-123 6G 6K



Department of Defense INSTRUCTION

NUMBER 6130.03 April 28, 2010

USD(P&R)

SUBJECT: Medical Standards for Appointment, Enlistment, or Induction in the Military Services

- a. Reissues DoD Directive (DoDD) 6130.3 (Reference (a)) as a DoD Instruction (DoDI) in accordance with the authority in DoDD 5124.02 (Reference (b)) to establish policy, assign responsibilities, and prescribe procedures for physical and medical standards for appointment, enlistment, or induction in the Military Services.
- Establishes medical standards, which, if not met, are grounds for rejection for military service. Other standards may be prescribed for a mobilization for a national emergency.
 - c. Incorporates and cancels DoDI 6130.4 (Reference (c)).

2. APPLICABILITY. This Instruction applies to:

- a. OSD, the Military Departments (including the Coast Guard at all times, including when it is a service in the Department of Homeland Security by agreement with that Department), the Office of the Chairman of the Joint Chiefs of Staff and the Joint Staff, the Combatant Commands, the Office of the Inspector General of the Department of Defense, the Dob Field Activities, and all other organizational entities within the Department of Defense (hereafter referred to collectively as the "DoD Components").
- b. The Reserve Components, which include the Army and the Air National Guards of the United States, in accordance with title 10, United States Code (Reference (d)).
- c. The United States Merchant Marine Academy in accordance with section 310.56 of title 46, Code of Federal Regulations (Reference (e)).

Air Force Instruction 48-123

- Sections 6G 6K
 - Lists disqualifying defects
 - -Gives guidance for the medical evaluation necessary for a possible waiver submittal
 - Flight surgeons should also review USAF Waiver Guide
- Who grants the waiver??
 - AFI tells you- Attachment 2
 - ?? Use of Aeromedical Consult Service

6.43.7.1. TAF 505-87-II-A Operational Requirements Document for Aircrew Laser Eye Protection.

6.43.7.2. AFI 11-301v4 Aircrew Laser Eye Protection (ALEP).

Section 6G-Medical Standards for Flying Duty

6.44. Medical Standards. For accessions and enlistments the standards in Chapter 4 apply. Chapter 5 applies to personnel already serving as active duty or ARC (example, AD SSgt applying for IFCI duty must meet retention standards in Chapter 5, as well as IFCI standards). For conditions listed in Chapter 5, ensure a MEB or assignment limitation code fast-track request has been initiated if appropriate. When a crewmember receives care by a non-flight surgeon provider, the member must be seen by a flight surgeon for appropriate aeromedical disposition prior to resuming flying duties. If a flight surgeon is not immediately available, the member will be removed from flying duties until seen by a flight surgeon or the visit has been reviewed by a flight surgeon. Note: For medical standards for RPA pilot duties only, refer to Section H.



q. Syncope or atraumatic loss of consciousness. History of recurrent syncope or presyncope (780.2), including blackout, fainting, loss or alteration of level of consciousness (excludes single episode of vasovagal reaction with identified trigger such as venipuncture), unless there has been no recurrence during the preceding 2 years while off all medication for treatment of this condition.

27. SLEEP DISORDERS

- a. Chronic insomnia (780.5). Within the past year, had difficulty sleeping, or used medications to promote sleep for more than 3 nights per week, over a period of 3 months.
- Sleep-related breathing disorders (327). Current diagnosis or treatment of sleep-related breathing disorders, including but not limited to sleep apnea (327.2).
- Current or history of narcolepsy, cataplexy (347-347.11), or other hypersomnia disorders (327.13-19).
 - d. Circadian rhythm disorders requiring treatment (307.45).
- e. Current or history of parasomnia (327.44, 327.49), including but not limited to sleepwalking, enuresis, or night terrors (307.46), after the age of 15.
- f. Current diag syndrome (327.5).

Chapter 4: Accession

5.3.2. Mouth, Nose, Pharynx, Larynx, and Trachea.

- 5.3.2.1. Larynx.
 - 5.3.2.1.1. Paralysis of the larynx. Characterized by bilateral vocal cord paralysis seriously interfering with speech or adequate airway.
 - 5.3.2.1.2. Stenosis of the larynx. Of a degree causing respiratory compromise.
 - 5.3.2.1.3. Obstructive edema. Obstructive edema of the glottis, if recurrent.
 - 5.3.2.1.4. Obstructive sleep apnea (OSA) requiring Continuous Positive Airway Pressure (CPAP) device. OSA controlled by other means such as a dental device or surgery meet standards if control has been demonstrated by either a follow-on sleep study and/or maintenance of wakefulness test.

Chapter 5: CMS

6.44.24.1.13. Sleep disorders, if of such magnitude to warrant somatic treatment greater than 30 days duration, or if associated with an Axis I disorder other than an adjustment disorder.

Waiver Guide (upcoming lecture)

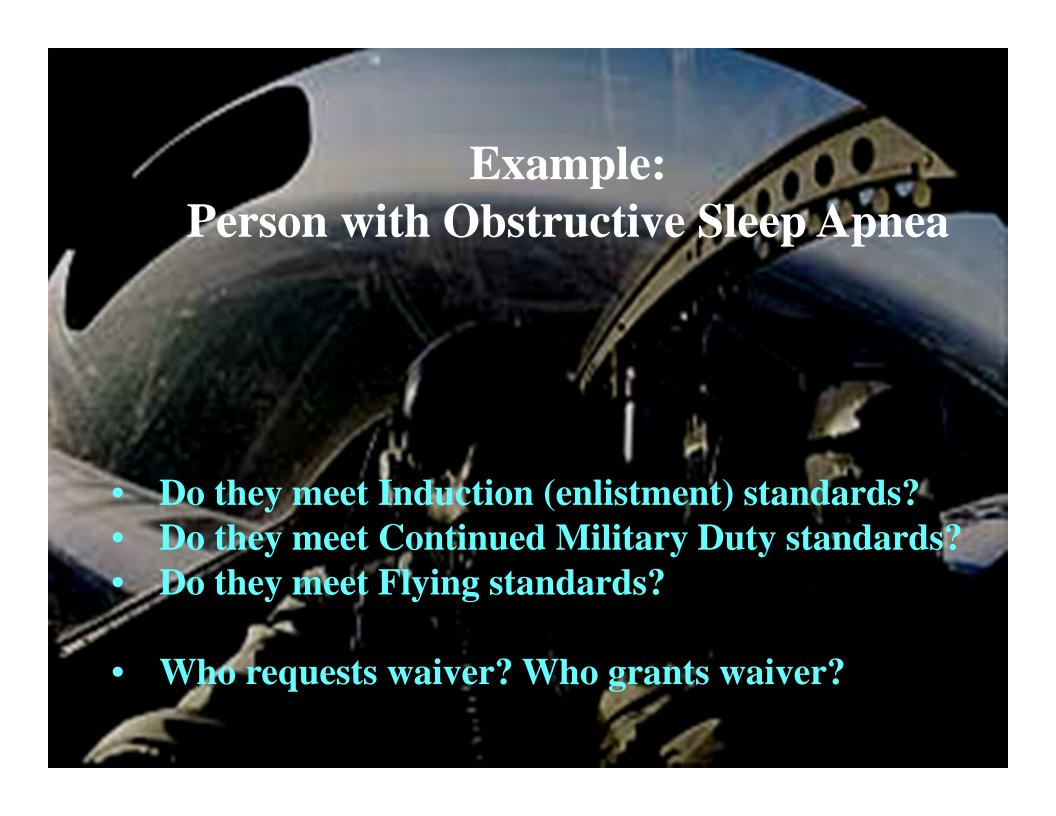
WAIVER GUIDE

Updated: Sep 08

By: Dr Jeb Pickard (ACS pulmonologist, AF/SG consultant for Aerospace Internal

Medicine) and Dr Karen Fox

CONDITION: SLEEP DISORDERS



Aerospace Medicine Terminology

- Grounding or DNIF (duty not to include flying)
 - Any medical personnel can recommend this to the commander (who may or may not accept the recommendation)
 - Short term ground vs. long term grounding decision involves diagnosis, treatment, disposition, and prognosis
 - AF Form 1042 is the official grounding paperwork
- DQ = disqualified
 - Dependent on medical condition
- RTFS = return to flying status
 - Only DoD flight surgeon can return someone to flying status (using the AF Form 1042)



The standards listed are not all inclusive and other diseases or defects can be cause for rejection based upon the judgment of the examining flight surgeon.



Waivers



Features



Juan Alvarez-BKA Major USAF H53 pilot **Prior USN pilot**

1997 traumatic L BKA

DQ: cont service

DQ: flying

USN Special Board of Flight

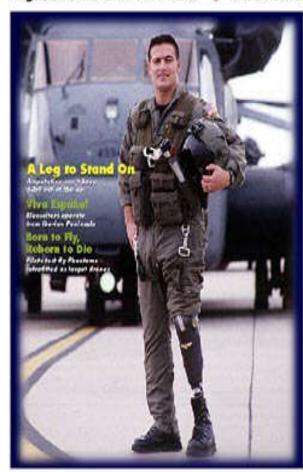
Surgeons: RTFS

Transfers to USAF!

Viva España! First in Space Space-Age Ideas **Water Wings** The Extreme Studio Born to Fly, Reborn to Die **Heart & SOLL**

Departments

Airman's World People Personnel Airmail **Top Performers** Here's Jake



ANG C-5 loadmaster selected for UPT

- IFC I? IFC I/IA? (trick)
- FC I

 SrA security police to go to Ft Benning for static line training.

- FC III? Yes, plus...
- Parachute duty (static line)
- US Army Regulation 40-501, Standards of Medical Fitness for most current requirements for attendance at Army schools.

 Lt missile silo launch officer annual PHA.

- FC III? No.
- SMOD

Capt IM physician in clinic going to AMP

- IFC II
- Certification authority

Col MSG CC orientation flight

- Orientation Flight (Section 6K)
- Can you sign 1042?

Medical Flight Screening

- FC I and FC IIU
- MFS adds special testing

Section 6E-Medical Flight Screening

6.23. Medical Flight Screening.

- 6.23.1. MFS is managed by the ACS and conducted at two sites: the ACS and the USAFA.
- 6.23.2. MFS uses additional advanced medical screening techniques (list of screening tests approved by AFMSA/SG3P and maintained at ACS) to ensure pilot candidates who have already passed their FCI physical are in compliance with standards described in this instruction and any superseding USAF policy. All UPT and FCIIU applicants must complete and successfully pass MFS or receive a waiver prior to starting UPT or RPA Pilot training.

History

- 1980s, USAFSAM, advanced specialized medical screening to FC I
- 8 Mar 94 Enhanced Flight Screening
 - Cardiology, ophthalmology, neuropsychological tests
- Echos stopped when found not useful
- Added full FC I: ROTC, then AFRC, ANG
- USAFA does their own
- Nov 08: RPA-P

Scope of MFS

- Anthropometrics
 - Standing height, sitting height, buttock to knee length
 - Additional measurements outside FC I standards
- Ophthalmic
 - Near and distant visual acuity
 - Color vision (PIP I, II, III, CCT and F2)
 - Depth perception
 - Corneal topography
 - Red lens test
- Neuropsychological testing 4 hr battery
 - Not for selection, baseline only

Anthropometrics

